In the Claims:

This listing of claims replaces all prior versions and listing of claims in the application.

Claims 1-7 (canceled).

8. (Currently amended) A method of reading a capacitive sensor comprising an array of capacitors ordered in rows and columns functionally connected through row lines and through column lines substantially orthogonal to each other, using a biasing and reading circuit comprising column and row selectors, and a charge amplifier outputting a voltage of the capacitance of a selected capacitor of the array, the method comprising:

resetting an output voltage of the charge amplifier;

connecting nonselected row and column lines of the array to a reference voltage~~,~~ while connecting one of an auxiliary capacitor and the selected capacitor to an inverting input of the amplifier while connecting the other one of the auxiliary capacitor and the selected capacitor to define a feedback capacitor of the amplifier; and

applying a step voltage on the capacitor that is connected to the inverting input of the amplifier and reading the output voltage at steady-state.

9. (Previously presented) The method of Claim 8, further comprising sequentially scanning the capacitors of the array to obtain a frame of capacitance values of the sensor.

10. (Previously presented) The method of Claim 9, wherein the scanning is repeated at a predetermined frame frequency.

11. (Currently amended) A method of reading a capacitive sensor comprising an array of capacitors connected in rows and columns, the method comprising:

providing a biasing and reading circuit comprising

column and row selectors,

an amplifier, connected to the column and row selectors, for outputting a voltage of the capacitance of a selected capacitor of the array, and

an auxiliary capacitor connected to the column and row selectors;

connecting nonselected rows and columns of the array to a reference voltage~~,~~ while connecting one of the auxiliary capacitor and the selected capacitor as an input of the amplifier while connecting the other one of the auxiliary capacitor and the selected capacitor to define a feedback capacitor of the amplifier; and

applying a step voltage on the capacitor that is connected ~~an~~ on the input of the amplifier and reading the output voltage at steady-state.

12. (Previously presented) The method of Claim 11, further comprising resetting the output voltage of the charge

amplifier.

13. (Previously presented) The method of Claim 11, further comprising sequentially scanning the capacitors of the array to obtain a frame of capacitance values of the sensor.

14. (Previously presented) The method of Claim 13, wherein the scanning is repeated at a predetermined frame frequency.

15. (Currently amended) A system for reading a capacitive sensor comprising an array of capacitors connected in rows and columns, the system comprising:

a biasing and reading circuit comprising an amplifier for outputting a voltage representing the capacitance of a selected capacitor, an auxiliary capacitor, configuration switches for coupling one of the auxiliary capacitor and the selected capacitor as a feedback capacitor and for coupling the other of the auxiliary capacitor and the selected capacitor to an input of the amplifier, and an analog-to-digital converter for converting the output voltage to digital data;

an input interface circuit for connecting deselected row lines and column lines of the array to a reference voltage and while ~~for~~ coupling the selected capacitor of the capacitive sensor to the biasing and reading circuit;

a microprocessor for performing noise filtering and real-time correction of data; and

a digital output interface circuit controlled by the microprocessor for outputting the digital data representing read values of capacitance of the sensor.

16. (Previously presented) The system according to Claim 15, wherein the input interface circuit comprises row and column selectors; and further comprising a timing signal generator, controlled by the microprocessor, for generating timing signals for the row and column selectors, for the biasing and reading circuit and for the converter, for synchronizing the operation phases of the circuits.

17. (Previously presented) The system of Claim 16, wherein the waveform generator comprises:

a shift register for cyclically producing the timing signals with a certain frequency; and

a finite states machine, controlled by the microprocessor unit, for configuring the shift register.

18. (Previously presented) The system according to Claim 15, wherein the input interface circuit comprises:

a selection logic circuit controlled by the microprocessor unit for producing selection signals; and

a plurality of connection modules for connecting the deselected rows and columns to the reference voltage, and for coupling the selected capacitor to the biasing and reading circuit based upon the selection signals.

19. (Currently amended) An integrated circuit for reading a capacitive sensor comprising an array of capacitors connected in rows and columns, the circuit comprising:

column and row selectors;

an amplifier, connected to the column and row selectors, for outputting a voltage of the capacitance of a selected capacitor of the array;

an auxiliary capacitor connected to the column and row selectors;

configuration switches for connecting deselected row lines and column lines of the array to a reference voltage and while coupling one of the auxiliary capacitor and the selected capacitor as a feedback capacitor and for coupling the other of the auxiliary capacitor and the selected capacitor to an input of the amplifier; and

a controller for controlling the configuration switches.

20. (Previously presented) The circuit according to Claim 19, further comprising:

an analog-to-digital converter for converting the output voltage to digital data; and

a digital output interface circuit for outputting the digital data representing read values of capacitance of the sensor.

21. (Previously presented) The circuit according to Claim 19, wherein the controller comprises a timing signal

generator for generating timing signals for the row and column selectors.

22. (Currently amended) A capacitive sensor device comprising:

an array of capacitors connected in rows and columns; and

a reading circuit for reading the array of capacitors and comprising

column and row selectors,

an amplifier, connected to the column and row selectors, for outputting a voltage of the capacitance of a selected capacitor of the array,

an auxiliary capacitor connected to the column and row selectors,

configuration switches for connecting deselected row lines and column lines of the array to a reference voltage and while coupling one of the auxiliary capacitor and the selected capacitor as a feedback capacitor and for coupling the other of the auxiliary capacitor and the selected capacitor to an input of the amplifier, and

a controller for controlling the configuration switches.

23. (Previously presented) The device according to Claim 22, wherein the reading circuit further comprises:

an analog-to-digital converter for converting the

output voltage to digital data; and

a digital output interface circuit for outputting the digital data representing read values of capacitance of the sensor.

24. (Previously presented) The device according to Claim 22, wherein the controller comprises a timing signal generator for generating timing signals for the row and column selectors.